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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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OSRAM SYLVANIA INC 100 ENDICOTT STREET DANVERS, MA 01923			EXAMINER HANLEY, BRITT D	
			ART UNIT 2879	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/526,312

Applicant(s)

BUNK ET AL.

Examiner

Britt Hanley

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☒ Claim(s) 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03/02/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :03/02/2205;
08/10/2005; 9/14/2005.

DETAILED ACTION

Priority

[01] Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

[02] The Information Disclose Statements include duplicates, and as such, these duplicates have been crossed out.

Claim Objections

[03] Claim 25 is objected to because of the following informalities: "if hydrogen to is to be bonded..." should be corrected to - if hydrogen is to be bonded --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

[04] The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

[05] Claims 1, 3-6, 8, 10, 12-18, 21-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

[06] Regarding claims 4 and 27, the phrase "if appropriate" renders the claim indefinite. Appropriate correction is required.

[07] Regarding claims 1, 3, 5, 8, 10, 12, 14, 15, 17, & 20-27, the phrase "preferably" renders the claims indefinite since the Examiner is unclear if the limitations following the phrase are required or not. Appropriate correction is required.

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[08] Regarding claim 20, the inclusion of CN and CS render the claim indefinite.

Appropriate correction is required.

[09] Regarding claims 24 & 26, the phrase "in some cases" renders the claims indefinite since the Examiner is unclear if the limitations following the phrase are required or not.

Appropriate correction is required.

[10] Regarding claim 26, the phrase "may be" renders the claim indefinite since the Examiner is unclear if the limitations following the phrase are required or not. Appropriate correction is required.

[11] Regarding claim 25, the phrase "if hydrogen to is to ..." renders the claim indefinite since the Examiner is unclear if the limitations following the phrase are required or not.

Appropriate correction is required.

[12] A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 1, 3, 5, 8, 10, 12, 14, 15, 17, 21, and 23-26 recites a broad recitation, for

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example in claim 8, hydrocarbon, and the claim also recites CH₄, C₂H₆, C₂H₄, C₂H₂ which is a narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

[13] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[14] The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

[15] Claims 1-5, & 7-24 are rejected under 35 USC 103 (a) as being obvious over Cooper (US 3,277,330) in view of Bell et al. (US 5,886,466).

[16] Regarding claim 1, Cooper discloses an incandescent lamp (column 1, lines 18-21) with a carbon cycle process (column 1, lines 64-70), in which a luminous body (10, fig. 1) together with a filling (12, fig. 1) is introduced in a vacuum-tight manner into a bulb (column 2, lines 6-8), the luminous body including a metal carbide (column 1, line 72), the melting point of which is above that of tungsten (well known in the art), a first cycle process (column 1, lines 64-70), which is attributed to the carbon, being effected by the use of carbon and at least one further element, in particular hydrogen (table I & table II), as fill additive, and a second

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cycle process, which is attributed to the metal, being effected by the use of a further element, preferably a halogen (column 2, lines 1-3). Copper does not appear to explicitly disclose that the distance between the luminous body and the wall of the bulb is less than 18 mm.

[17] However, in the same field of halogen incandescent lamps, Bell et al. teach the diameter of an envelope body in the range of 0.250 to 0.313 inches (6.35 to 8 mm)

[18] At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Cooper and Bell et al. before him or her, to modify the bulb of Cooper to include the bulb diameter of Bell et al. in order to use the lamp in miniature applications such as flashlights and other portable lights (column 1, lines 52-56; Bell et al.).

[19] Regarding claim 2, the combination of Cooper and Bell et al. disclose the incandescent lamp as claimed in claim 1, characterized in that the luminous body is a coiled wire or a ribbon (filament may be [...] straight, coiled, crimped, or otherwise shaped, column 2, lines 25-26, Cooper), consisting of tantalum carbide at least at its surface (tantalum carbide filament, column 1, line 72, Cooper).

[20] Regarding claim 3, the combination of Cooper and Bell et al. disclose the incandescent lamp as claimed in claim 1, characterized in that the bulb consists of quartz glass or hard glass (hard glass, column 1, line 51, Bell et al.) with a bulb diameter of between 5 mm and 35 mm (6.3-8 mm, abstract, Bell et al.), preferably between 8 mm and 15 mm (see rejection under 112 above).

[21] At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Cooper and Bell et al. before him or her, to modify the bulb of Cooper to include the bulb material of Bell et al. because it has been held to be within the

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ordinary skill of an artisan to select a known material on the basis of the intended use. See MPEP 2144.07.

[22] Regarding claim 4, the combination of Cooper and Bell et al. disclose the incandescent lamp as claimed in claim 1, characterized in that the fill contains inert gas (column 6, lines 9-11, Cooper), in particular noble gas (column 6, lines 9-11, Cooper), if appropriate with additional small quantities of nitrogen, and at least one hydrocarbon, hydrogen and at least one halogen additive (see rejection under 112 above).

[23] Regarding claim 5, the combination of Cooper and Bell et al. disclose the incandescent lamp as claimed in claim 1, characterized in that the luminous body consists of TaC, ZrC, HfC or an alloy of various carbides (tantalum carbide filament, column 1, line 72, Cooper), preferably containing TaC (see rejection under 112 above), and in particular is a coiled wire (filament may be [...] straight, coiled, crimped, or otherwise shaped, column 2, lines 25-26, Cooper).

[24] Regarding claim 13, the combination of Cooper and Bell et al. disclose the incandescent lamp as claimed in claim 1, characterized in that the total quantity of halogen introduced into the lamp is less than that of the hydrogen (table II, Cooper), and in particular the total quantity of halogen introduced into the lamp is smaller by a factor of 5 to 25 than the total quantity of hydrogen introduced (100 cc hydrogen & 5-100 cc of hydrogen chloride, table II, Cooper).

[25] Regarding claim 19, the combination of Cooper and Bell et al. disclose the incandescent lamp as claimed in claim 1, characterized in that an additional carbon/nitrogen cycle process (nitrogen is present in the fill, table I & table II, Cooper)

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assists the carbon/hydrogen cycle process and at the same time a halogen is present (table II, Cooper).

[26] Regarding claim 21, the combination of Cooper and Bell et al. disclose the incandescent lamp as claimed in claim 1, characterized in that in addition to the inert gas the following additives are present for the fill in the bulb, so that the total content in the gas phase, based on a cold filling pressure of 1 bar, is preferably (see rejection under 112 above) as follows (in mol %): carbon 0.25%-5%, sulfur 0.05%-5%, hydrogen 0.5%-40%, hydrocarbon (table I & II, Cooper), preferably (see rejection under 112 above) CH_4 , C_2H_6 , C_2H_4 , C_2H_2 ; hydrogen (H_2) (table I & II, Cooper); hydrogen sulfide H_2S or carbon disulfide CS_2 or methyl mercaptan CH_3SH or ethyl mercaptan $\text{C}_2\text{H}_5\text{SH}$ or dimethyl sulfide CH_3CSCH_3 .

[27] Regarding claim 22, the combination of Cooper and Bell et al. disclose the incandescent lamp as claimed in claim 21, characterized in that the molar concentration of the total element sulfur introduced into the lamp is lower by a factor of 0.1 to 1 than the molar concentration of the total element carbon introduced into the lamp, and the molar concentration of the total element hydrogen introduced into the lamp is preferably at least equal to the sum of four times the molar concentration of carbon and double the molar concentration of sulfur, in which context in particular the molar concentration of the hydrogen may be greater than this minimum quantity by up to factor of 8.

[28] Regarding claim 23, the combination of Cooper and Bell et al. disclose the incandescent lamp as claimed in claim 1, characterized in that in addition to the inert gas the following additives are present for the fill in the bulb, so that the total content in the gas phase, based on a cold filling pressure of 1 bar, is preferably (see rejection under 112 above) as follows (in mol %): carbon 0.1%-5%, sulfur 0.05%-5%, hydrogen 0.5%-40%, iodine

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0.2%-40% hydrocarbon (table I & II, Cooper), preferably (see rejection under 112 above) CH₄, C₂H₆, C₂H₄, C₂H₂; hydrogen (H₂) (table I & II, Cooper); hydrogen sulfide H₂S or carbon disulfide CS₂ or methyl mercaptan CH₃SH or ethyl mercaptan C₂H₅SH or dimethyl sulfide CH₃CSCH₃ hydrogen iodide HI or methyl iodide CH₃I or ethyl iodide C₂H₅I.

[29] Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper (US 3,277,330) in view of Bell et al. (US 5,886,466) as applied to claim 1 above, and further in view of Agte (US 1,854,970).

[30] Regarding claim 6, the combination of Cooper and Bell et al. disclose the incandescent lamp as claimed in claim 1 above. However, the combination of Cooper and Bell et al. do not appear to explicitly disclose the luminous body comprises a core and a coating at its surface, the core in particular being a rhenium wire or a carbon fiber or a bundle of carbon fibers which is/are coated with carbide as recited in claim 6.

[31] However, in the same field of halogen incandescent lamps, Agte teach an incandescent body having a core of rhenium and coated with tantalum carbide (page 1, lines 35-50) in order to overcome the small mechanical strength of the carbide (page 1, lines 13-16) and maintain a long filament life (42-50). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the filament of Cooper with the filament of Agte in order to increase the mechanical strength of the filament and thus, increase the life of the filament.

[32] Claims 7-12, 14-18, 20, & 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper (US 3,277,330) in view of Bell et al. (US 5,886,466) as applied to claim 1 above, and further in view of DeCaro (US 4,463,277).

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[33] Regarding claim 7, 9, & 11, the combination of Cooper and Bell et al. disclose the incandescent lamp as claimed in claim 1 above. However, the combination of Cooper and Bell et al. do not appear to explicitly disclose that the dimensions of the bulb are selected in such a way that the bulb wall temperature is between 100° C. and 700° C as recited in claim 7, between 150° C and 900° C as recited in claim 9; or between 150° C and 600° C as recited in claim 11.

[34] However, in the same field of incandescent lamps, DeCari teach a bulb wall temperature of 400° C and 500° C in order to operate within the temperature range of the bulb wall (column 5, lines 5-42). Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the bulb wall dimensions of Cooper in order to have the bulb wall temperatures of DeCaro so that the bulb wall temperatures do not exceed the operating range of the bulb wall.

[35] Regarding claim 8, the combination of Cooper, Bell et al., and DeCaro disclose the incandescent lamp as claimed in claim 7, characterized in that in addition to the inert gas the following additives are present for the fill in the bulb, so that the total content in the gas phase, based on a cold filling pressure of 1 bar, is preferably (see rejection under 112 above) as follows (in mol %): carbon 0.1%-5%, hydrogen 0.2%-20%, bromine 0.05%-0.5% (table I & II, Cooper): hydrocarbon (table I & II, Cooper), preferably (see rejection under 112 above) CH₄, C₂H₆, C₂H₄, C₂H₂; hydrogen (H₂); hydrogen bromide HBr (column 6, lines 18-20, Cooper) or a halogenated hydrocarbon (table I & II, Cooper), preferably (see rejection under 112 above) CH₂Br₂, CHBr₃ or CH₃Br (column 6, lines 18-20, Cooper).

[36] Regarding claim 17, the combination of Cooper, Bell et al., and DeCaro disclose incandescent lamp as claimed in claim 7, characterized in that in addition to the inert gas

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the following additives are present for the fill in the bulb, so that the total content in the gas phase, based on a cold filling pressure of 1 bar, is preferably (see rejection under 112 above) as follows (in mol %): carbon 0.1%-5%, hydrogen 0.2%-20%, bromine 0.05%-0.5%, iodine 0.1%-20% (table I & II, Cooper): hydrocarbon (table I & II, Cooper), preferably (see rejection under 112 above) CH.sub.4, C.sub.2H.sub.6, C.sub.2H.sub.4, C.sub.2H.sub.2; hydrogen (H.sub.2); hydrogen bromide HBr or a brominated (column 6, lines 18-20, Cooper) hydrocarbon (table I & II, Cooper), preferably (see rejection under 112 above) CH.sub.2Br.sub.2, CHBr.sub.3 or CH.sub.3Br; hydrogen iodide or iodine I.sub.2 or an iodinated hydrocarbon, preferably (see rejection under 112 above) CH.sub.3I or C.sub.2H.sub.5I (column 6, lines 18-20, Cooper).

[37] Regarding claim 20, the combination of Cooper, Bell et al., and DeCaro disclose the incandescent lamp as claimed in claim 8, in which in addition from 0.3 mol % to 3 mol % of CN or CS are present in the gas phase (table I or II, Cooper).

[38] Regarding claim 10, the combination of Cooper, Bell et al., and DeCaro disclose the incandescent lamp as claimed in claim 9, characterized in that in addition to the inert gas the following additives are present for the fill in the bulb, so that the total content in the gas phase, based on a cold filling pressure of 1 bar, is preferably (see rejection under 112 above) as follows (in mol %): carbon 0.1%-5%, hydrogen 0.2%-20%, chlorine 0.05%-0.5% (table I or II, Cooper): hydrocarbon (table I or II, Cooper), preferably (see rejection under 112 above) CH.sub.4, C.sub.2H.sub.6, C.sub.2H.sub.4, C.sub.2H.sub.2; hydrogen (H.sub.2); hydrogen chloride HCl or a halogenated hydrocarbon (table I or II, Cooper), preferably (see rejection under 112 above) CH.sub.2Cl.sub.2, CHCl.sub.3, or CH.sub.3Cl (column 6, lines 18-20, Cooper).

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[39] Regarding claim 15, the combination of Cooper, Bell et al., and DeCaro disclose the incandescent lamp as claimed in claim 9, characterized in that in addition to the inert gas the following additives are present for the fill in the bulb, so that the total content in the gas phase, based on a cold filling pressure of 1 bar, is preferably (see rejection under 112 above) as follows (in mol %): carbon 0.1%-5%, hydrogen 0.2%-20%, chlorine 0.05%-0.5%, iodine 0.1%-20% (table I or II, Cooper); hydrocarbon (table I or II, Cooper), preferably CH₄, C₂H₆, C₂H₄, C₂H₂; hydrogen (H₂); hydrogen chloride HCl or an halogenated hydrocarbon (table I or II, Cooper), preferably (see rejection under 112 above) CH₂Cl₂, CHCl₃ or CH₃Cl; hydrogen iodide HI or iodine I₂ or an iodinated hydrocarbon, preferably (see rejection under 112 above) CH₃I or C₂H₅I (column 6, lines 18-20, Cooper).

[40] Regarding claim 25, the combination of Cooper, Bell et al., and DeCaro disclose the incandescent lamp as claimed in claim 9, characterized in that in addition to the inert gas the following additives are present for the fill in the bulb, so that the total content in the gas phase, based on a cold filling pressure of 1 bar, is preferably (see rejection under 112 above) as follows (in mol %): carbon 0.25%-5%, sulfur 0.05%-5%, hydrogen 0.5%-40%, chlorine or bromine 0.02% -0.5% or iodine 0.02%-40% (if hydrogen to is to be bonded by iodine) hydrocarbon (table I or II, Cooper), preferably (see rejection under 112 above) CH₄, C₂H₆, C₂H₄, C₂H₂; hydrogen (H₂); hydrogen sulfide H₂S or carbon disulfide CS₂ or methyl mercaptan CH₃SH or ethyl mercaptan C₂H₅SH or dimethyl sulfide CH₃CSCH₃ a halogenated hydrocarbon, e.g. one or two of the following compounds: CH₂Cl₂, CHCl₃, CCl₄, CH₂Br₂, CH₃Br, CH₃I, C₂H₅I, HCl, HBr, HI, Cl₂, Br₂, I₂ (table I or II, Cooper).

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[41] Regarding claim 12, The incandescent lamp as claimed in claim 11, characterized in that in addition to the inert gas the following additives are present for the fill in the bulb, so that the total content in the gas phase, based on a cold filling pressure of 1 bar, is preferably (see rejection under 112 above) as follows (in mol %): carbon 0.1%-5%, hydrogen 0.2%-20%, iodine 0.05%-0.5%; hydrocarbon (table I or II, Cooper), preferably (see rejection under 112 above) CH.sub.4, C.sub.2H.sub.6, C.sub.2H.sub.4, C.sub.2H.sub.2; hydrogen (H.sub.2); hydrogen iodide HI or iodine I.sub.2 or an iodinated hydrocarbon, preferably (see rejection under 112 above) CH.sub.3I or C.sub.2H.sub.5I (column 6, lines 18-20, Cooper).

[42] Regarding claim 14, The incandescent lamp as claimed in claim 11, characterized in that in addition to the inert gas the following additives are present for the fill in the bulb, so that the total content in the gas phase, based on a cold filling pressure of 1 bar, is preferably (see rejection under 112 above) as follows (in mol %): carbon 0.1%-5%, hydrogen 0.2%-20%, iodine 0.1%-20%; hydrocarbon, preferably (see rejection under 112 above) CH.sub.4, C.sub.2H.sub.6, C.sub.2H.sub.4, C.sub.2H.sub.2; hydrogen (H.sub.2); hydrogen iodide HI or iodine I.sub.2 or an iodinated hydrocarbon, preferably (see rejection under 112 above) CH.sub.3I or C.sub.2H.sub.5I.

[43] Regarding claim 27 the incandescent lamp as claimed in claim 11, characterized in that in addition to the inert gas the following additives are present for the fill in the bulb, so that the total content in the gas phase, based on a cold filling pressure of 1 bar, is preferably (see rejection under 112 above) as follows (in mol %): carbon 0.1%-5%, sulfur 0.02%-5%, chlorine 0.42%-30%, carbon tetrachloride CCl.sub.4, disulfurdichloride S.sub.2Cl.sub.2 or sulfur dichloride SCl.sub.2 (table I or II, Cooper), and if appropriate (see rejection under 112 above) also chlorine Cl.sub.2 or nitrogen trichloride NCl.sub.3 or carbon tetrachloride CCl.sub.4, carbon disulfide CS.sub.2, chlorine Cl.sub.2 or nitrogen trichloride NCl.sub.3.

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[44] Claims 22 & 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper (US 3,277,330) in view of Bell et al. (US 5,886,466) as applied to claim 1 above, and further in view of Bird (US 3,237,284).

[45] Regarding claim 22 & 24, the combination of Cooper, Bell et al., and DeCaro disclose the incandescent lamp as claimed in claim 25. However, the combination of Cooper, Bell et al., and DeCaro do not appear to explicitly disclose that the total element sulfur introduced into the lamp is lower by a factor of 0.1 to 1 than the molar concentration of the total element sulfur introduced into the lamp is lower by a factor of 0.1 to 1 than the molar concentration of the total element carbon introduced into the lamp, and the molar concentration of the total element hydrogen introduced into the lamp is preferably at least equal to the sum of the molar concentration of carbon multiplied by 4 and the molar concentration of sulfur multiplied by two. However, in the same field of incandescent lamps, Bird teaches an atmosphere containing at least one source of carbon and at least one source of sulfur (column 4, lines 0-20) and that the amount of carbon in the atmosphere should be sufficient to prevent the carbide filament from decomposing (column 4, lines 65-67). Although Bird does not teach an amount of carbon or sulfur, routine optimization within the prior art has been held to be within the skill of one having ordinary skill in the art.

[46] Claims 26 & 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper (US 3,277,330) in view of Bell et al. (US 5,886,466) as applied to claim 1 above, and further in view of DeCaro (US 4,463,277) as applied to claim 25 above, and further in view of Bird (US 3,237,284).

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[47] Regarding claim 26 & 27, the combination of Cooper, Bell et al., and DeCaro disclose the incandescent lamp as claimed in claim 25. However, the combination of Cooper, Bell et al., and DeCaro do not appear to explicitly disclose that the total element sulfur introduced into the lamp is lower by a factor of 0.1 to 1 than the molar concentration of the total element carbon introduced into the lamp. However, in the same field of incandescent lamps, Bird teaches an atmosphere containing at least one source of carbon and at least one source of sulfur (column 4, lines 0-20) and that the amount of carbon in the atmosphere should be sufficient to prevent the carbide filament from decomposing (column 4, lines 65-67). Although Bird does not teach an amount of carbon or sulfur, routine optimization within the prior art has been held to be within the skill of one having ordinary skill in the art.

Conclusion

[48] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Britt Hanley whose telephone number is (571) 270-3042. The examiner can normally be reached on Monday - Thursday, 6:30a-5:00p ET.

[49] If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571)272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

[50] Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to

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the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner Britt D. Hanley

Britt Hanley

K. S. Hanley
10/1/07